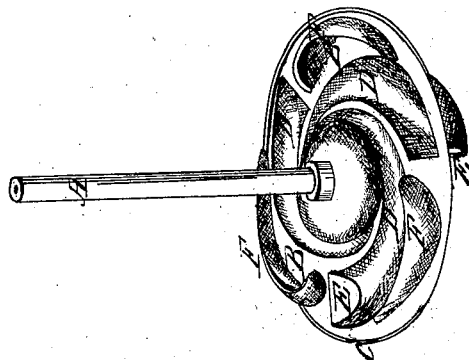
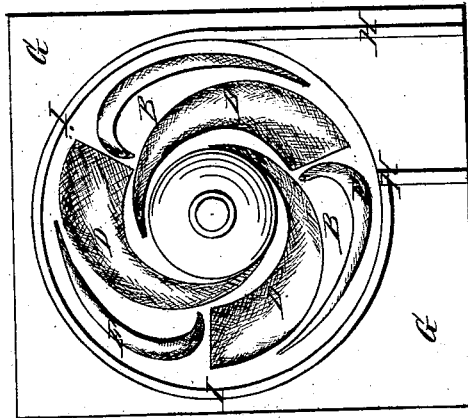
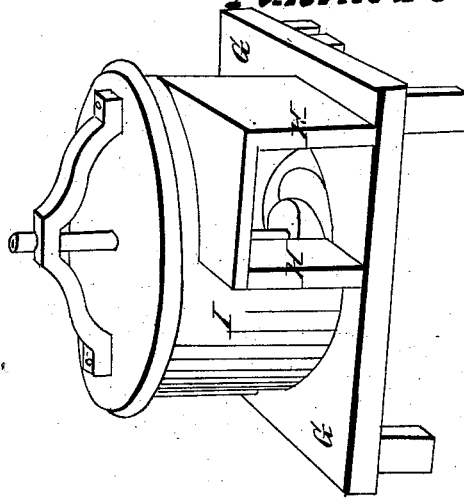


*Simpson & Adams,*  
*Water Wheel.*

*N<sup>o</sup> 5,312.*

*Patented Oct. 2, 1847.*



# UNITED STATES PATENT OFFICE.

WILLIAM SIMPSON AND HORACE ADAMS, OF LANGDON, NEW HAMPSHIRE.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 5,312, dated October 2, 1847.

*To all whom it may concern:*

Be it known that we, WILLIAM SIMPSON and HORACE ADAMS, of Langdon, in the county of Sullivan and State of New Hampshire, have invented a new and useful Method of Constructing a Water-Wheel, its form being such as to receive the combined percutient, centrifugal, and reactive forces of the water when applied to it, and which is denominated "Simpson & Adams' Combined Water-Wheel;" and we hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings.

Figure 1 is a perspective view of the wheel. Fig. 2 is a plan view of the wheel, encircled by the platform beneath which it runs, and also a vertical sectional view of the ajutage for introducing the water and of the cylinder for retaining it within the circumference of the wheel. Fig. 3 is a perspective view of the platform, ajutage, and cylinder, with the wheel in its plane beneath it.

Fig. 1, the perspective view, shows the wheel upon the shaft A, and which consists of a plate B B of cast-iron or other material, with a lip C at the periphery projecting from its upper disk, and three or more curved tapering channels D D D (see also same letters, Fig. 2) sunken in the plate, the small ends of which commence about one-third of the distance from the center to the periphery, and on a line with the circumference at that point, and from thence diverging, widening, and becoming deeper until they have gained half around the center and nearly to the periphery of the plate, where they constitute the openings E E for the discharge of the water. Projecting from the upper disk of the plate there are a corresponding number of buckets F F F, extending along within the periphery and across that part of the plate at the discharge ends of the channels D, Figs. 1 and 2.

Fig. 2 shows a plan view of the wheel with the platform G G above it, the inner edge of the platform covering the lip C at the periphery and encircling the buckets upon the upper surface of the wheel. H H shows a vertical sectional view of the ajutage for introducing the water to the wheel, and also of the cylinder or case I for retaining it upon the wheel until it has passed through the discharges E E.

Fig. 3 is a perspective view of the platform G G and the ajutage H H, and of the cylinder I, with the wheel in its place beneath it.

Operation: The water is introduced from a bulk-head through the ajutage H H, when it operates, first, by percussion upon the buckets, and, being retained upon that part of the wheel within the buckets along the periphery, it becomes a continuous resistance for the water from the ajutage to drive against. By thus introducing the water a head is immediately formed within the cylinder, and which acts, secondly, as a whirlpool by its pressure and centrifugal force against the bottoms and outer edges of the channels D D, and, thirdly, by its reactive force as it passes from the channels through the openings E E. (See Fig. 1.)

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination of the tapering channels D, sunk in the plate B, and the curved buckets F, formed on the upper surface of plate B, and near its periphery with the plate B, the whole being constructed, arranged, and operating in the manner and for the purpose set forth.

WILLIAM SIMPSON.  
HORACE ADAMS.

Witnesses:

DAVID FISHER,  
CHARLES FISHER.